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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/610,683	07/02/2003	Shigemi Hirasawa	501.42899X00	2909
20457	7590	10/10/2006	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			RIELLEY, ELIZABETH A	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/610,683

Applicant(s)

HIRASAWA ET AL.

Examiner

Elizabeth A. Rielley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-7 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-7 and 10-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Amendment filed 7/11/06 has been entered and considered by the Examiner. Claims 2, 3, 8, and 9 have been canceled. Currently, claims 1, 4-7, and 10-14 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-6, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori (US 5599749) in view of Ito (US 7067171).

In regard to claim 1, Hattori ('749) teaches a display device (figure 29) comprising: a front substrate (66; column 21 line 40 to column 22 line 26; figure 29) forming an anode (67) and phosphors (68) on an inner surface thereon; a back substrate (61) having electron sources (64), provided within a display region, on an inner surface thereof (see figure 29), the back substrate being arranged to face the front substrate in an opposed manner with a given distance there between (see figure 29); an outer frame (left and right 70) which is interposed between the front substrate and the back substrate (66, 61) such that the outer frame surrounds the display region (not numbered; see figure 29) so as to maintain the given

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distance (see figure 29); and distance holding members (middle 70) being sandwiched between the front substrate (66) and the back substrate (61) in an erected manner within the display region (see figure 29) and holding a distance between the front substrate and the back substrate at a given distance; wherein an inside space (not numbered) is surrounded by the front substrate (66), the back substrate (61), and the outer frame (left and right 70; see figure 29) is sealed at a given degree of vacuum (column 1 lines 12-41); and wherein a buffering/fixing material (not numbered; column 21 lines 60-67) is provided between the distance holding member (middle 70) within the display region and at least on of the front substrate and the back substrate (see figure 29), and the buffering/fixing material if formed by an adhesive (column 21 lines 60-67).

Hattori ('749) does not specifically teach that the buffering/fixing material includes conductive particles. In the same field of endeavor, Ito ('171) teaches a display device (figure 15) in which the use of a buffering/fixing material that is made of an adhesive material mixed with conductive particles (1502; column 20 lines 42-46) is used for a distance holding member within the display region (1020; see figure 15; column 15 lines 41-54) in order that the distance holding member be electrically connected with the electron source on the back substrate and the anode on the front (column 20 lines 42-46). Thus, it would have been obvious at the time of the invention to one of ordinary skill in the art to incorporate to conductive bonding material of Ito with the bonding material of Hattori ('749). Motivation would be to make the distance holding member conductive and electrically connect both substrates

In regard to applicant's recitation of the buffering/fixing material that is formed by mixing an adhesive with a highly resilient material, which dissipates in a baking step, the Examiner notes that the recitation is considered a product by process limitation. The patentability of the claim resides on the final product and not the process by which is manufactured. Accordingly, Uchiyama ('770) teachings of a buffering/fixing material made with adhesive material is considered to meet the claimed recitation, since the highly resilient material is not part of the finished product.

In regard to claims 4 and 5, applicant's recitation of the buffering/fixing material that is formed by mixing an adhesive with a highly resilient material, which dissipates in a baking step, is considered a product by process limitation. It has been recognized that "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process," *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See also MPEP 2113. Since the highly resilient material is removed from the adhesive in the baking step, the material is no longer present in the final product. Therefore, Accordingly, Hattori/Ito's teaching of a conductive adhesive is considered to meet the claimed recitation.

In regard to claim 6, Hattori ('749) teaches low melting-point glass is used as the adhesive (column 21 line 40 to column 22 line 26).

In regard to claim 13, Hattori ('749) teaches the buffering/fixing material (not numbered; column 21 lines 60-67) fixes the distance holding member (middle 70) to at least one of the front substrate (66) and the back substrate (61) and to at least one other of the front substrate (66, via 67) and the back substrate (61, via 62; see figure 29).

Claims 7, 10-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori (US 5599749) in view of Ito (US 7067171) and Uchiyama (US 6265770).

In regard to claims 7, 10 and 11, Hattori ('749) teaches a display device (figure 29) comprising: a front substrate (66; column 21 line 40 to column 22 line 26; figure 29) forming an anode (67) and phosphors (68) on an inner surface thereon; a back substrate (61) having electron sources (64), provided within a display region, on an inner surface thereof (see figure 29), the back substrate being arranged to face the front substrate in an opposed manner with a given distance there between (see figure 29); an outer frame (left and right 70) which is interposed between the front substrate and the back substrate (66, 61) such that the outer frame surrounds the display region (not numbered; see figure 29) so as to maintain the given distance (see figure 29); and distance holding members (middle 70) being sandwiched between the front substrate (66) and the back substrate (61) in an erected manner with in the display region (see figure 29) and holding a distance between the front substrate and the back substrate at a given distance; wherein an inside space (not numbered) is surrounded by the front substrate (66), the back substrate (61), and the outer frame (left and right 70; see figure 29) is sealed at a given degree of vacuum (column 1 lines 12-41); and wherein a buffering/fixing material (not numbered; column 21 lines 60-67) is provided between the distance holding member (middle 70) within the display region and at least on of the front substrate and the back substrate (see figure 29), and the buffering/fixing material if formed by an adhesive (column 21 lines 60-67). Hattori ('749) does not specifically teach that the buffering/fixing material includes conductive particles and a highly resilient material that is present after a baking step, the highly resilient material being aramid-based fibers (a.k.a. Kevlar).

In the same field of endeavor, Ito ('171) teaches a display device (figure 15) in which the use of a buffering/fixing material that is made of an adhesive material mixed with conductive particles (1502; column 20 lines 42-46) is used for a distance holding member within the display region (1020; see figure 15; column 15 lines 41-54) in order that the distance holding member be electrically connected with the electron source on the back substrate and the anode on the front (column 20 lines 42-46). Thus, it would have been obvious at the time of the invention to one of ordinary skill in the art to incorporate to

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conductive bonding material of Ito with the bonding material of Hattori ('749). Motivation would be make the distance holding member conductive and electrically connect both substrates.

In the same field of endeavor of adhesive resins, Uchiyama ('770) teaches the use of a buffering/fixing material in a display device that is made of an adhesive material mixed with a highly resilient material (column 7 lines 19-26). Accordingly, Uchiyama exemplifies the art recognized equivalence of glass fiber and epoxy resin with aramid based fibers and BT resin, thus, one skilled in the art at the time of the invention would reasonable contemplate modifying the epoxy resin of Hattori and Ito to incorporate the aramid based fibers of Uchiyama since the selection of either art recognized equivalent assemblies would be considered within the level of skill in the art.

In regard to claim 12, Hattori ('749) teaches low melting-point glass is used as the adhesive (column 21 line 40 to column 22 line 26).

In regard to claim 14, Hattori ('749) teaches the buffering/fixing material (not numbered; column 21 lines 60-67) fixes the distance holding member (middle 70) to at least one of the front substrate (66) and the back substrate (61) and to at least one other of the front substrate (66, via 67) and the back substrate (61, via 62; see figure 29).

Response to Arguments

Applicant's arguments with respect to claims 1, 4-7, and 10-14 have been considered but are moot in view of the new ground(s) of rejection.

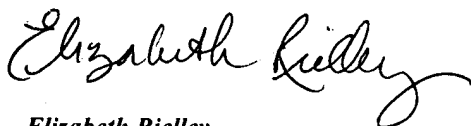
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elizabeth Rielley

Examiner
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MARICELI SANTIAGO
PRIMARY EXAMINER